b) P(C) = $P(\overline{T} \cap A) = P(\overline{T}).P(A/\overline{T})$ or P($\overline{T}$) = $\frac{1}{2}$ et d'après 1°/ a)

P ($A/\overline{T}$) = P[X = 2] = $\frac{15}{216} = \frac{5}{72}$ d'où P'(C) = $\frac{5}{144}$

c) On a : A = B ∪ C et B ∩ C = ∅ donc P(A) = P(B) + P(C) = $\frac{7}{48}$.

Solution 16 :

1°/ X(Ω) = { 0 , 1 , 2 }]

- P[X = 0] = P(NN) = $\frac{2}{4}.\frac{1}{3} = \frac{1}{6}$
- P[X = 1] = P(NB) + P(BN) = $\frac{2}{4}.\frac{2}{3} + \frac{2}{4}.\frac{2}{4} = \frac{7}{12}$
- P [X = 2] = P(BB) = $\frac{2}{4}.\frac{2}{4} = \frac{1}{4}$

x_i	0	1	2
P_i	$\frac{1}{6}$	$\frac{7}{12}$	$\frac{1}{4}$

$\sum_i P_i = 1$

b) $E(X) = \sum_{i=1}^{3} x_i P_i = \frac{7}{12} + \frac{2}{4} = \frac{13}{12}$

2°/ Y(Ω) = { 1 , 2 , 4 }

P[Y = 1] = P (B_1B_1) + P (N_1B_1) + P(B_1N_1) = $(\frac{1}{4})^2 + \frac{1}{4}.\frac{1}{3} + (\frac{1}{4})^2 = \frac{5}{24}$

P[Y = 2] = P (N_1N_2) + P (N_2N_1) + P(B_1B_2) + P(B_2B_1) + P (N_1B_2) + P

(B_2N_1) + P (N_2B_1) + P (B_1N_2) = $(\frac{1}{4}.\frac{1}{3}).4.(\frac{1}{4})^2 = \frac{14}{24}$